



## **SIMULATED AND OPTIMIZED**

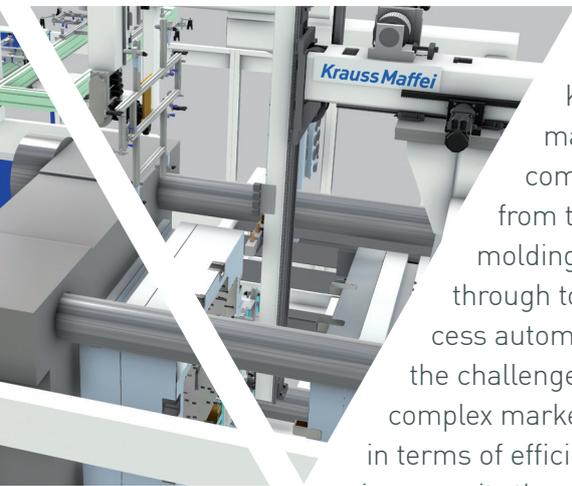
### **KraussMaffei looks to the future with VISUAL COMPONENTS**

KraussMaffei Automation Ltd. provide production automation solutions for injection molding and reaction process machinery on a global basis. They are using VISUAL COMPONENTS' 3D simulation solutions to support their sales process, design and manufacturing processes, and also the offline programming of robotic equipment. KraussMaffei aims to detect all system vulnerabilities by simulating ahead of commissioning. The results underline reduced delivery time and greater planning reliability due to the "prevention is the best medicine" approach.

## Prevention being the best medicine – reliable planning with 3D simulation

KraussMaffei Automation have been operating for over 30 years, and they have built up a comprehensive portfolio of cost effective solutions for injection and reaction molding automation. The portfolio ranges from simple Pick & Place applications to technologically sophisticated turnkey solutions. Whether the application calls for linear, gantry or articulated robots, KraussMaffei can deliver the required processes.

# Krauss Maffei



As a system partner, KraussMaffei manages the complete delivery from the injection molding machinery through to turn-key process automation. To meet the challenge of increasingly complex market requirements in terms of efficiency and planning security they have invested in the use of simulation software.

### VISUAL COMPONENTS: Rapidly implemented - individually simulated

The selection process for the right software quickly focused on the 3D product suite from VISUAL COMPONENTS. KraussMaffei already had experience creating custom factory

and simulation components using 3DCreate software, which corresponds to the current VISUAL COMPONENTS “Professional” version. They purchased another Professional license, this time with a full service contract, to thoroughly test and evaluate the software according to their needs. Based on the results, KraussMaffei upgraded this license to VISUAL COMPONENTS Premium, which also gave them the ability to simulate robot cells in greater detail.

The project was implemented in collaboration with Germany’s most experienced VISUAL COMPONENTS partner, DUALIS GmbH IT Solution. Together, the rapid implementation took place in parallel to other ongoing operations. It took only four weeks to get from installing the software to the first finished simulation of KraussMaffei’s LRX Robots. The project’s swift realisation can also be contributed to the allocation of sufficient resources from the IT team, who had the required knowledge of CAD software and robot programming.

### Virtual assistant for design, sales, and operation

Today, KraussMaffei use their simulation solution for concept development, by validating project designs with offline programming and collision checks, as well as sales support for new projects.



### Planning ahead – in 3D

“The simulation enables us to design and study realistic concepts, so that we can identify design deficiencies early in the process and find better solutions.”

Erwin Maushammer, Robotic simulation with VC Premium, KraussMaffei Automation

For sales support, the software is the sales team's most indispensable tool. A simulation is developed to visualize an automation system through the use of a detailed working model, with supporting images and animations. These are used to convey a concept that otherwise, could have been hard to grasp for many people. The easy to understand demo model sets a visual basis for discussion that also demonstrates the feasibility of planned projects.

Simulations also promote concept validation by providing insight to cycle times, process sequences, and optimal component positioning. The company averts potential commissioning risks and errors by carrying out collision checks and material flow simulations before the designs leave the drawing board. Additional time and expenses are saved in the commissioning stage through the connection of the simulation software to controller software.

DUALIS's custom developed post-processor add-on for teaching robot actions, can export a robot manufacturer-specific program to the robot unit's controller. This allows the company to use the robot programs and motion sequences simulated with VISUAL COMPONENTS directly for the real robot, thus saving programming effort.

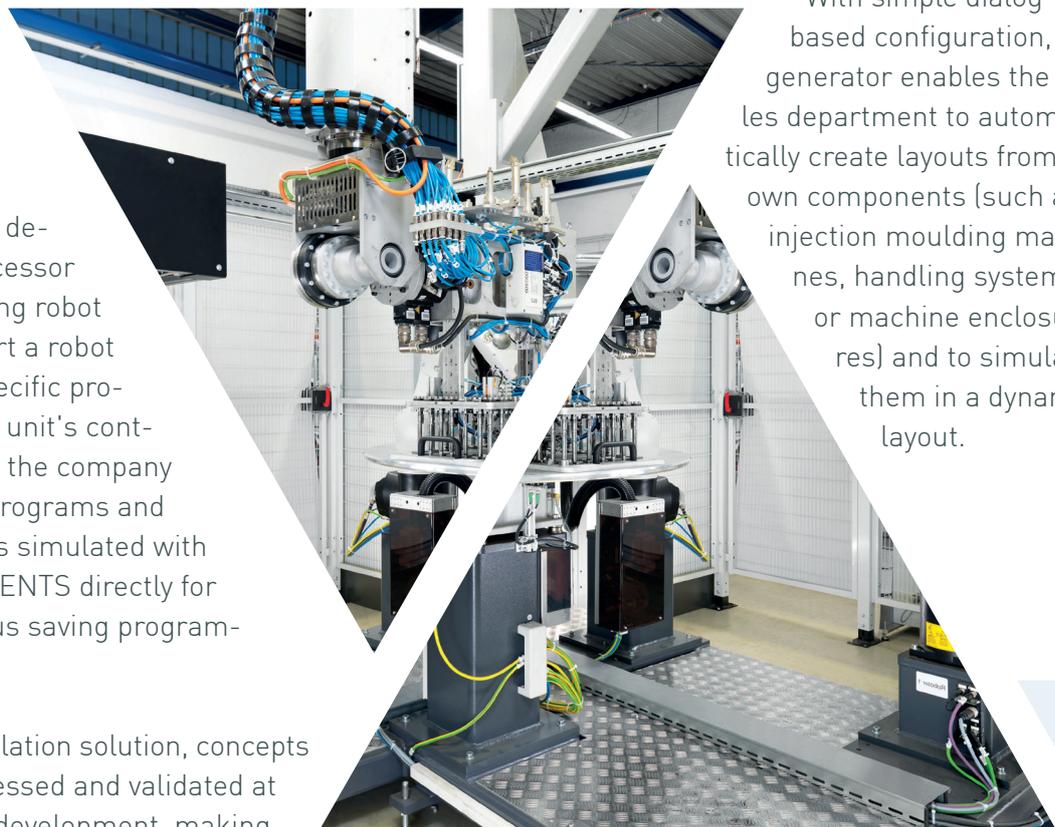
By using the simulation solution, concepts can be easily assessed and validated at an early stage of development, making all the processes clear and transparent right from the beginning. This greatly simplifies custom function implementation as well as extension planning and conversions for pre-existing layouts.

## From 3D Reality to the Future

Erwin Maushammer draws the conclusion on the benefits of DUALIS' solutions for KraussMaffei: "The simulation enables us to identify deficiencies in a concept or a design and resolve them at the early stages of a project. Additionally, throughput rates and commissioning times for new products has improved significantly. The results generated by the simulation, give our colleagues in the marketing and sales division, convincing arguments to use to their advantage when meeting clients."

To streamline the sales process, an automatic layout generator is also in use. DUALIS held several individual workshops for implementation training. The implementation was carried out by KraussMaffei itself.

With simple dialog-based configuration, the generator enables the sales department to automatically create layouts from its own components (such as injection moulding machines, handling systems or machine enclosures) and to simulate them in a dynamic layout.



The layouts can then be exported into impressive PDF formatted documents containing the layout's 3D view and a list of costs

## Facts and Numbers



Year of introduction: 2013



Budget: 35.000 Euro



Goal: Simulation-based concept for planning and validation of injection molding applications



Scope of the license:

VC Professional, VC Premium, VC Essentials



Custom programs:

Layout generator (C# development)



Interface:

Communication between layout generator and VISUAL COMPONENTS via .NET API



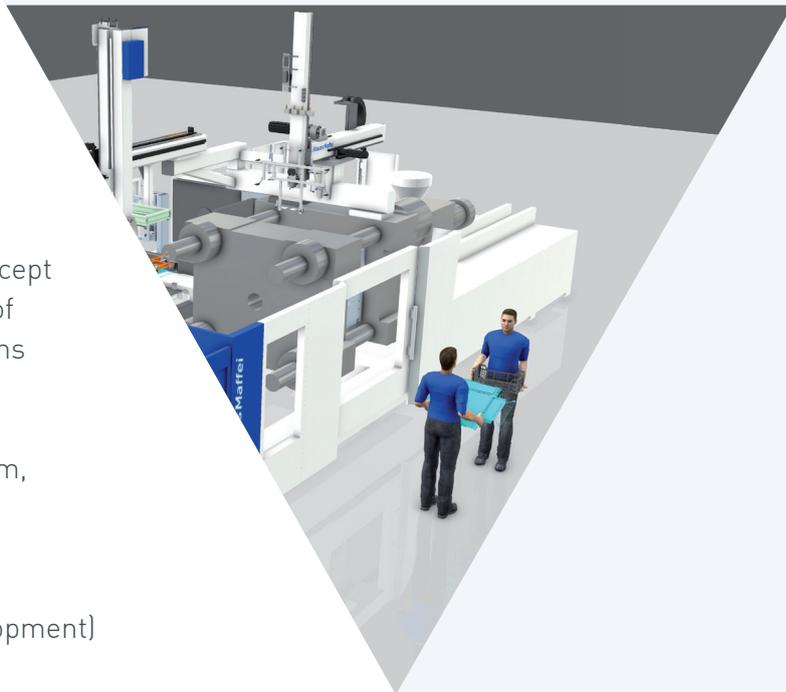
Applications:

Layout planning, production line planning, visualisation of injection molding applications, sales and demos, project planning



Results:

More secure planning, improved throughput rates, powerful sales arguments.



“We needed an open platform that would provide us with a large range of built-in robots, but at the same time provide us with an opportunity to create our own custom components when needed for simulation purposes. Thankfully with VISUAL COMPONENTS, DUALIS is able to offer such a platform.”

Erwin Maushammer, Robotic simulation with VC Premium, KraussMaffei Automation

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